

**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

- 1 1. (currently amended) A method of analyzing network characteristics comprising  
2 the steps of:  
3 querying a network element in a communication network for local network  
4 information;  
5 receiving the local network information from the network element in response to  
6 querying, the local network information comprising one or more items selected from the  
7 group including topology information, connection information, and performance  
8 information;  
9 analyzing the local network information received to map a communication path  
10 established in the network;  
11 responsive to the local network information received and the communication path  
12 mapped in the analyzing step, selecting a next network element of the communication  
13 path ~~element~~ for querying; and  
14 if the next network element has been selected, iterating the method from the  
15 querying step for the next network element.
- 1 2. (original) The method as defined in claim 1 further comprising the step of  
2 receiving a notification signal from one or more network elements, the notification signal  
3 indicative of a network event, and wherein the step of querying is initiated in response to  
4 receiving said notification signal.
- 1 3. (original) The method as defined in claim 1 further comprising the step of  
2 determining network capacity using communication path data from the analyzing step.

1 4. (original) The method as defined in claim 1 further comprising the step of  
2 determining network performance using the communication path data from the analyzing  
3 step.

1 5. (original) The method as defined in claim 1 further comprising the step of  
2 detecting network faults using communication path data from the analyzing step.

1 6. (original) The method as defined in claim 1 wherein the topology information  
2 includes a routing table and wherein the connection information includes a connection  
3 table.

1 7. (previously presented) A computer having a memory for storing a software  
2 program that, when executed by a processor, causes the computer to perform a method  
3 comprising the steps of:

4 querying a network element in a communication network for local network  
5 information;

6 receiving the local network information from the network element in response to  
7 querying, the local network information comprising one or more items selected from the  
8 group including topology information, connection information, and performance  
9 information;

10 analyzing the local network information received to map a communication path  
11 established in the network;

12 responsive to the local network information received and the communication path  
13 mapped in the analyzing step, selecting a next network element of the communication  
14 path for querying; and

15 if the next network element has been selected, iterating the method from the  
16 querying step for the next network element.

1 8. (previously presented) The computer as defined in claim 7 further comprising the  
2 step of receiving a notification signal from one or more network elements, the  
3 notification signal indicative of a network event, and wherein the step of querying is

4 initiated in response to receiving said notification signal.

1 9. (previously presented) The computer as defined in claim 7 further comprising the  
2 step of determining network capacity using communication path data from the analyzing  
3 step.

1 10. (previously presented) The computer as defined in claim 7 further comprising the  
2 step of determining network performance using communication path data from the  
3 analyzing step.

1 11. (previously presented) The computer as defined in claim 7 further comprising the  
2 step of detecting network faults using communication path data from the analyzing step.

1 12. (previously presented) The computer as defined in claim 7 wherein the topology  
2 information includes a routing table and wherein the connection information includes a  
3 connection table.

1 13. (original) A method for analyzing network characteristics comprising the steps  
2 of:

3 receiving a notification signal from a network element, said notification signal  
4 indicative of a new communication path set-up by the network element and including  
5 circuit identifier information;

6 querying a network element in a communication network for connection  
7 information;

8 receiving the connection information from the network element in response to  
9 querying;

10 comparing the connection information with the circuit identifier information to  
11 determine a match condition;

12 if the match condition occurs in the comparing step, querying the network  
13 element for routing information;

14 receiving routing information from the network element;

15           analyzing the routing information received to map the new communication path  
16 established in the network;  
17           selecting a next network element to query along the new communication path;  
18           if the next network element has been selected, fetching from the received circuit  
19 identifier information associated with the next network element and iterating the method  
20 from the step of querying for the next network element.

1   14.   (original) The method as defined in claim 1 further including the step of storing  
2 the communication path established through the communication network.

1   15.   (previously presented) The computer as defined in claim 7 further including the  
2 step of storing the communication path established through the communication network.

1   16.   (original) The method as defined in claim 13 further including the step of storing  
2 the communication path established through the communication network.

1   17.   (previously presented) Apparatus for analyzing network characteristics in a  
2 network including a plurality of network elements interconnected together to form a  
3 communication network, the apparatus comprising:  
4           means for querying a network element in the communication network for local  
5 network information, the local network information comprising one or more items  
6 selected from the group including topology information, connection information, and  
7 performance information;  
8           means, responsive to receipt of the local network information, for analyzing the  
9 local network information received to map a communication path established in the  
10 network; and  
11          means, responsive to the local network information received and the  
12 communication path mapped in the analyzing means, for selecting a next network  
13 element of the communication path for querying;  
14          wherein the means for querying is responsive to a notification that the next  
15 network element has been selected.

1 18. (original) The apparatus as defined in claim 17 wherein the querying means  
2 further comprises means for receiving a notification signal from one or more network  
3 elements, the notification signal indicative of a network event, and wherein the querying  
4 means is responsive to receiving said notification signal.

1 19. (original) The apparatus as defined in claim 17 further comprising means for  
2 determining network capacity using the communication path from the analyzing means.

1 20. (original) The apparatus as defined in claim 17 further comprising means for  
2 determining network performance using the communication path from the analyzing  
3 means.

1 21. (original) The apparatus as defined in claim 17 further comprising means for  
2 detecting network faults using the communication path from the analyzing means.

1 22. (original) The apparatus as defined in claim 17 wherein the topology  
2 information includes a routing table and wherein the connection information includes a  
3 connection table.